



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,005	12/19/2001	Jared E. Bobbitt	004933.P004	3627

7590 11/01/2004

R. Alan Burnett
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER

ALABAIDI, HAYTHIM J

ART UNIT PAPER NUMBER

2161

DATE MAILED: 11/01/2004

2

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,005

Applicant(s)

BOBBITT ET AL.

Examiner

Haythim J. Alaubaidi

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This communication is a first Non-Final Office Action in response to Application No. 10/025005, filed on December 19, 2001
2. Claims 1-30 are presented for examination, with Claims 1, 12, 16 and 25 as Independent Claims.
3. Claims 1-4 and 7-30 are rejected under 35 U.S.C. 102(b).
4. Claims 5 and 6, are rejected under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 and 7-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Joseph E. Provino (U.S. Patent No. 5,778,384 and Provino hereinafter).

Regarding Claims 1, 11-12, 16 and 25 Provino discloses:

aggregating the storage space of said plurality of file systems into a single virtual storage space (Col 6, Lines 2-10) that appears to clients as local file system (Col 6, Lines 11-24);

creating a virtual volume directory and file name hierarchy including a virtual pathname for each data file stored in the virtual volume (Col 6, Lines 2-10; see also Col 6, Lines 54-57; see also Col 9, Lines 1-8; see also Col);

providing a software virtualization layer (redirector) including both client-side and server-side software components that cooperatively enable clients to access data files stored in the virtual volume through reference (identifiers) to the virtual pathnames for those data files (Col 23, Line 63 through Col 24, Line 8); and

wherein clients that access data files stored in the virtual volume do not need to know the file servers and pathnames under which those data files are actually stored (Col 17, Line 66 through Col 18 Line 11, i.e. "*in which at least some access requests do not include path information*").

Regarding Claim 2, Provino discloses LAN (Figure No. 1 and corresponding text; see also Col 1, Lines 16-23).

Regarding Claims 3 and 30, Provino discloses WAN (Figure No. 1 and corresponding text; see also Col 1, Lines 37-40).

Regarding Claim 4, Provino discloses different file system types (Col 10, Lines 9-14; see also Col 15, Lines 60-65).

Regarding Claims 7 and 17, Provino discloses storing file mapping that is used to route client file system access requests that reference a virtual file name to a file server and location at which the data file is actually stored (Col 8, Line 56 through Col 9, Line 3).

Regarding Claims 8, 13, 15, 18-19 and 26, Provino, discloses wherein data describing the virtual volume directory and file name hierarchy is stored in a master logical volume and the data files corresponding to the virtual pathnames in the virtual volume are stored in one or more slave logical volumes (Figure No. 1 and corresponding text; see also Col 6, Lines 2-10; see also Col 6, Lines 11-24; see also Col 6, Lines 2-10; see also Col 6, Lines 54-57; see also Col 9, Lines 1-8; see also Col).

Regarding Claims 9-10 and 14, Provino discloses maintaining a copy of system configuration information that identifies the file server used to host the master logical volume and the file servers hosting the slave logical volumes on each client that accesses the virtual file system (Col 5, Lines 15-22; see also Col 8, Lines 37-43; see also Col 11, Lines 13-20).

Regarding Claims 20-22, Provino discloses wherein each file in the master directory and file hierarchy structure comprises a pointer file that includes data that identifies on what slave logical volume the data file corresponding to that file is physically stored (Col 23, Line 63 through Col 24, Line 8).

Regarding Claim 23, Provino discloses wherein a copy of system configuration information that identifies the file servers that host each of the master logical volume and the slave logical volumes is maintained on each client that accesses the virtual file system (Col 5, Lines 15-22; see also Col 8, Lines 37-43; see also Col 11, Lines 13-20).

Regarding Claim 24, Provino discloses wherein creation of a new virtual directory in the virtual directory and file name hierarchy comprises creating a new directory in the master directory and file hierarchy structure having a hierarchical position and name corresponding to a hierarchical position and name of the new directory in the virtual directory and file name hierarchy (Col 6, Lines 2-10; see also Col 6, Lines 54-57; see also Col 9, Lines 1-8; see also Col).

Regarding Claim 27, discloses system configuration information that maps each of the master logical volume and the slave logical volumes to the file server that hosts that master or slave logical volume is stored on one of said plurality of file servers and a local copy of the system configuration information is maintained on each of the files servers and each of the clients (Col 5, Lines 15-22; see also Col 8, Lines 37-43; see also Col 11, Lines 13-20).

Regarding Claims 28 and 29, Provino discloses, system configuration information is changed in response to a change in a configuration of the plurality file servers and/or underlying file systems, and wherein each client includes an agent that updates the

local copy of the system configuration information stored on the client when the system configuration information is changed (Col 7, Lines 52-60).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5 and 6, are rejected under 35 U.S.C. 103(a) as being unpatentable over Joseph E. Provino (U.S. Patent No. 5,778,384 and Provino hereinafter) in view of James E. Reuter (U.S. Patent No. 6,745,207 and Reuter hereinafter).

Regarding Claims 5 and 6, Provino reference discloses all of the claimed subject matter set forth above including the feature of adding new file system (Col 2, Lines 20-35), except it does not explicitly indicate the step of dynamically scaling the single virtual storage space by adding a new underlying file system to the virtual file system without having to take any existing underlying file system offline. However, Reuter discloses scaling the single virtual storage space by adding a new underlying file system to the virtual file system without having to take any existing underlying file system offline (Col 8, Lines 8-19; see also Col 8, Lines 22-24; see also Col 10, Lines 9-16; see also Col 11, Lines 39-52; see also Col 2, Lines 1-8).

Given the intended broad application of the Provino's system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Provino with the teachings of Reuter to add the scaling feature by adding a new file system without having to take the system off-line; one reason would be to increase the flexibility of managing the resources, saving time in accessing the storages and the reduction of the cost (Reuter, Col 2, Lines 9-17).

Other Prior Art Made of Record

9. a. Schmuck et al. (U.S. Patent No. 6678700) discloses a system of and method for transparent management of data objects in containers across distributed heterogenous resources;

b. O'Brien et al. (U.S. Patent No. 6351776) discloses a shared internet storage resource, user interface system, and method; and

c. Thomas et al. (U.S. Patent No. 6061692) discloses a system and method for administering a meta database as an integral component of an information server.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Points of Contact

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haythim J. Alaubaidi whose telephone number is (571) 272-4014. The examiner can normally be reached on Monday - Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (571) 272-4023.


Any response to this office action should be mailed to:

The Commissioner of Patents and Trademarks, Washington, D.C. 20231 or telefax at our fax number (703) 872-9306.

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, 6th Floor Receptionist, Arlington, Virginia. 22202.

Haythim J. Alaubaidi

Patent Examiner
Technology Center 2100
Art Unit 2161
October 25, 2004


SAFET METJAHIC
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100